

Appl. No. : 10/614,431
Filed : July 7, 2003

AMENDMENTS TO THE CLAIMS

1-117. (Cancelled)

118. (Currently amended) A method of processing a cell population that comprises adipose-derived stem cells ~~for reintroduction into a patient~~, comprising:

removing adipose tissue that comprises a cell population that comprises adipose-derived stem cells from a patient;

introducing the removed adipose tissue that comprises said cell population that comprises adipose-derived stem cells into a self-contained adipose-derived stem cell processing unit configured to maintain a closed pathway, wherein said self-contained adipose derived stem cell processing unit comprises;

a tissue collection container that is configured to receive adipose tissue that is removed from a patient, wherein said tissue collection chamber is defined by a closed system;

a first filter that is disposed within said tissue collection container, wherein said first filter is configured to retain a first component of said unprocessed adipose tissue and pass a second component of said unprocessed adipose tissue, such that said first filter separates said first component from said second component, and wherein said first component comprises a cell population that comprises adipose-derived stem cells and said second component comprises lipid, mature adipocytes, and saline;

a cell collection chamber, which is configured to receive said first component comprising a cell population that comprises adipose-derived stem cells from said tissue collection container, wherein said cell collection container is within said closed system;

a conduit configured to allow passage of said first component comprising a cell population comprising adipose-derived stem cells from said tissue collection chamber to said cell collection chamber while maintaining a closed system;

a cell concentrator disposed within said cell collection chamber, which is configured to facilitate the concentration of said first component comprising a cell

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population that comprises adipose-derived stem cells so as to obtain a concentrated population of cells that comprises adipose-derived stem cells, wherein said cell concentrator comprises a centrifuge or a spinning membrane filter; and

an outlet configured to allow the aseptic removal of said concentrated population of cells that comprise adipose-derived stem cells;

separating and concentrating said a-cell population that comprises adipose-derived stem cells from mature adipocytes and connective tissue present in the said removed adipose tissue that was removed from said patient such that said mature adipocytes and said connective tissue are substantially separated from said cell population that comprises adipose-derived stem cells within said self-contained cell processing unit while maintaining said closed pathway; and

concentrating said cell population that comprises adipose-derived stem cells within said self-contained cell processing unit while maintaining said closed pathway;

providing said patient or contacting said concentrated cell population that comprises adipose-derived stem cells with an additive; and

reintroducing said concentrated cell population that comprises adipose-derived stem cells into said patient.

119. (Canceled)

120. (Previously presented) The method of Claim 118, wherein said adipose tissue that is removed from said patient is lipoaspirate.

121. (Previously presented) The method of Claim 118, wherein said adipose tissue that is removed from said patient is obtained by excisional lipectomy.

122. (Canceled)

123. (Previously presented) The method of Claim 118, further comprising a disaggregation step, wherein said cell population comprising adipose-derived stem cells contained in the removed adipose tissue is mechanically or enzymatically disaggregated from said mature adipocytes and connective tissue present in the adipose tissue that was removed from said patient prior to separation.

124. (Cancelled)

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125. (Currently amended) The method of Claim ~~124~~118, wherein said ~~filter-cell~~
concentrator ~~is comprises~~ a spinning membrane filter.

126. (Currently amended) The method of Claim ~~124~~118, wherein said ~~filter-cell~~
concentrator comprises an antibody.

127. (Previously presented) The method of Claim 126, wherein said antibody is
selected from the group consisting of AP2, CD3, CD19, and CD11b.

128. (Currently amended) The method of Claim 118, wherein said ~~cell population~~
~~comprising said adipose-derived stem cells is separated from said mature adipocytes and~~
~~connective tissue present in the adipose tissue that was removed from said patient by~~
~~centrifugation~~cell concentrator comprises a centrifuge.

129. (Previously presented) The method of Claim 123, wherein said disaggregation
step comprises an enzymatic digestion.

130. (Previously presented) The method of Claim 129, wherein said enzymatic
digestion comprises a collagenase.

131. (Previously presented) The method of Claim 129, wherein said enzymatic
digestion comprises a neutral protease.

132. (Previously presented) The method of Claim 129, wherein said enzymatic
digestion comprises trypsin.

133. (Previously presented) The method of Claim 118, wherein said adipose-derived
stem cells in said concentrated cell population that comprises adipose-derived stem cells are at
least 0.1% of the cellular component.

134. (Previously presented) The method of Claim 118, wherein said adipose-derived
stem cells in said concentrated cell population that comprises adipose-derived stem cells are
between about 2% and about 12% of the cellular component.

135. (Previously presented) The method of Claim 118, wherein said concentrated cell
population that comprises adipose-derived stem cells has a concentration of about 2×10^7 cells/100ml adipose tissue.

136. (Previously presented) The method of Claim 118, wherein said concentrated cell
population that comprises adipose-derived stem cells comprises endothelial precursor cells.

137-140. (Canceled)

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141. (Previously presented) The method of Claim 118, wherein said additive is a tissue or tissue fragment.

142. (Previously presented) The method of Claim 118, wherein said additive is demineralized bone.

143. (Previously presented) The method of Claim 118, wherein said additive is a compound of the thiaglitazone family.

144. (Previously presented) The method of Claim 118, wherein said additive is insulin.

145. (Previously presented) The method of Claim 118, wherein said additive is an exogenous DNA.

146. (Previously presented) The method of Claim 118, wherein said additive is a biological or artificial scaffold.

147. (Previously presented) The method of Claim 146, wherein said biological or artificial scaffold is a resorbable plastic sheath.

148. (Previously presented) The method of Claim 118, wherein said additive is an immunosuppressive agent.

149. (Previously presented) The method of Claim 148, wherein said immunosuppressive agent is selected from the group consisting of cyclosporine, myophenylate mofetil, rapamycin, and antithymocyte globulin.

150. (Previously presented) The method of Claim 118, wherein said additive is a cell differentiation agent.

151. (Previously presented) The method of Claim 150, wherein said cell differentiation agent is a cytokine.

152. (Previously presented) The method of Claim 150, wherein said cell differentiation agent is a growth factor.

153. (Previously presented) The method of Claim 118, wherein said additive is an antimicrobial agent.

154. (Canceled)

155. (Canceled)

156. (New) The method of Claim 118, wherein said additive is unprocessed adipose tissue.

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157. (New) The method of Claim 118, wherein said cell collection chamber of said self-contained adipose-derived stem cell processing unit comprises a port configured to receive said additive while maintaining a closed, sterile pathway.

158. (New) The method of Claim 118, wherein said tissue collection chamber of said self-contained adipose-derived stem cell processing unit comprises a port configured to receive said additive while maintaining a closed, sterile pathway.